

Astrophysics / PHYS-UA 150 / Fall 2018 / Syllabus

This course teaches astrophysics at a level appropriate for undergraduate physics majors who have taken the first two years of the physics sequence. Classes meet Tuesday and Thursday 9:30am to 10:45am, in Room 1067 of 726 Broadway. The textbook is *Principles of Astrophysics*, by Charles Keeton.

Prof. Farrar's office is Room 954, 726 Broadway and her email is gf25@nyu.edu. Office hours are Wednesday 12:30pm to 1:45pm.

The teaching assistant is Marco Muzio (msm659@nyu.edu). Recitation is Tuesday 4:55-6:10 pm, in Room 264 of 726 Broadway.

Grades are based on problem sets (35%), two exams during the term (35%), one final (20%), and class participation (10%).

The class will be participatory. Please read the assignments before attending class; you will be asked questions on the material.

The classes will proceed as follows (subject to revision!). The problem sets will be due on each Friday of the indicated weeks.

<i>Sep. 4</i>	Introduction	Ch. 1	
<i>Sep. 6</i>	Celestial Mechanics	Ch. 2	
<i>Sep. 11</i>	Gravitational One-body Problem	Ch. 3	PS #1 due
<i>Sep. 13</i>	Gravitational Two-body Problem	Ch. 4.1	
<i>Sep. 18</i>	Gravitational Two-body Problem	Ch. 4.2	PS #2 due
<i>Sep. 20</i>	Spectroscopic & Eclipsing Binaries	Ch. 4.3	
<i>Sep. 25</i>	Tidal Effects	Ch. 5	PS #3 due
<i>Sep. 27</i>	Spiral Galaxies	Ch. 7.1–7.2	
<i>Oct. 2</i>	Spiral Galaxies	Ch. 7.3	PS #4 due
<i>Oct. 4</i>	Exam #1		
<i>Oct. 9</i>	No class: Legislative Day		
<i>Oct. 11</i>	Going over the Exam		
<i>Oct. 16</i>	Spiral Galaxies	Ch. 7.4	PS #5 due
<i>Oct. 18</i>	Planetary Atmospheres	Ch. 12	
<i>Oct. 23</i>	Planetary Temperatures	Ch. 13.1–13.3	PS #6 due
<i>Oct. 25</i>	Planetary Temperatures	Ch. 13.4–13.5	
<i>Oct. 30</i>	Gravitational Lensing	Ch. 9.1	PS #7 due
<i>Nov. 1</i>	Gravitational Lensing Applications	Ch. 9.2–9.4	
<i>Nov. 6</i>	Stellar Atmospheres	Ch. 14	PS #8 due
<i>Nov. 8</i>	Nuclear Fusion	Ch. 15.1–15.2	
<i>Nov. 13</i>	Fusion in Stars	Ch. 15.3–15.4	
<i>Nov. 15</i>	Exam #2		
<i>Nov. 20</i>	Stellar Structure	Ch. 16.1–16.2	
<i>Nov. 22</i>	No class: Thanksgiving Break		
<i>Nov. 27</i>	Stellar Structure	Ch. 16.3	PS #9 due
<i>Nov. 29</i>	Stellar Evolution	Ch. 16.4	
<i>Dec. 4</i>	White Dwarfs	Ch. 17.1–17.2	PS #10 due
<i>Dec. 6</i>	Neutron Stars	Ch. 17.3	
<i>Dec. 11</i>	Black Holes	—	
<i>Dec. 13</i>	Charting the Hubble Expansion	Ch. 18	PS #11 due
<i>Dec. 18</i>	FINAL EXAM 8:00am–9:50am Room 1067, 726 Bwy		